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## The Progressive Farmer.

CLARENCE H. POE, - - - Editor and Manager.  
B. W. KILGORE, }  
C. W. BURKETT, } - - - Agricultural Editors

### FERTILIZERS: POTASH AND THE MATERIALS SUPPLYING IT.

Potash as spoken of in connection with fertilizers is made up of the elements oxygen (one of the gases of the air) and potassium, which is a soft, white substance. It floats upon and acts on water so vigorously that fire is produced, the substance thus formed being that kind of concentrated lye that is used in making soft soap. Even potash (potassium and oxygen) is so active that it could not be handled and used as a fertilizer. It unites itself with great vigor to such acids as sulphuric, to form sulphate of potash—muriatic acid to form muriate of potash—and carbonic acid, to form carbonate of potash. These last three substances—sulphate of potash, muriate of potash, and carbonate of potash—with the impurities accompanying them, are the main materials used for supplying potash to plants, either as potash alone or in mixed fertilizers. They are all readily soluble in water and are thus available for plant food.

The chief source of potash materials is the Stassfurt mines in Germany, where they occur in great abundance and variety. Those used for fertilizer purposes are:

#### KAINIT.

Kainit is a crude product of the mines and contains, in addition to about 12.4 per cent of potash (248 pounds to the ton), about 35 per cent of common salt. The rest of it is made up mainly of magnesium sulphate and chloride. The potash in kainit is in the form of sulphate, but the large quantities of common salt and magnesium chloride it contains, gives it no advantage over the muriate of potash.

#### MURIATE OF POTASH.

Muriate of potash is a purified product of the potash mines, and is one of the richest of the materials supplying potash. It contains about 50 per cent of potash (1,000 pounds to the ton), the other 50 per cent being mainly the element chloride.

#### SULPHATE OF POTASH.

Sulphate of potash contains 48 to 51 per cent of potash (about 1,000 pounds to the ton), which is in the form of sulphate, and it possesses special advantages for such crops as tobacco, Irish potatoes and some others.

#### SULPHATE OF POTASH MAGNESIA.

Sulphate of potash magnesia, also called "low grade" sulphate of potash, contains 26 to 28 per cent of potash (about 540 pounds to the ton), the balance of it being mainly sulphate of magnesia and a small amount of common salt.

#### TOBACCO STEMS.

Tobacco stems and other-refuse products of the tobacco plant are to be had in considerable quantities in the tobacco growing and manufacturing districts. They are quite variable in composition

and contain from 1 to 3 per cent of nitrogen, 3 to 8 per cent of potash and  $\frac{1}{2}$  to 4 per cent of insoluble phosphoric acid. Nearly all the potash in tobacco stems is soluble in water and is therefore readily available to plants. Tobacco stems are serviceable also in preventing or diminishing insect ravages and fungous diseases.

#### WOOD ASHES

Wood ashes are valuable chiefly for the potash they contain, which varies in unleached ashes from 2 to 8 per cent, being more in the hard wood ashes like oak and hickory, and less in the soft woods as pine, etc. As the potash in ashes is very soluble in water, exposure to rain or to leaching soon results in the removal of the potash, so that leached ashes have but little value beyond the lime they contain. In addition to the potash, ashes contain 30 to 40 per cent of lime, which has a beneficial physical effect on the soil. The potash in wood ashes is one of the most desirable forms and is suitable for all crops.

As far as experiments have gone the results are to the effect that a pound of actual potash in any of the above materials is of practically equal value, so far as increasing growth in plants is concerned. In other words, four tons of kainit, which contain about one thousand pounds of potash, will be required to produce the same amount of growth in crops as one ton of muriate of potash carrying one thousand pounds of potash. Where the four tons of kainit costs the same as the one ton of muriate, by the use of the latter freight, hauling and handling of three tons of material is saved. For general crops, then, that source of potash should be selected which will furnish the potash for the least money. There are some important exceptions to this rule. For cotton on land that is subject to rust it is better to use kainit, as this material has a tendency to reduce, and in some cases, to entirely prevent rust. High grade sulphate of potash is the better source of this material for tobacco, as the chlorides in the muriate of potash and kainit injure the burning palaty of tobacco. High grade sulphate gives a better quality of tobacco than the other materials, though it has no advantages over tobacco stems and wood ashes as a source of potash for this crop.

In like manner a good many experiments have shown that sulphate of potash produces a smoother and firmer Irish potato than kainit or muriate, though the latter materials, where equal amounts of potash are used, will give just as much in the way of yield.

B. W. KILGORE.

A Duplin County reader writes: "Please send me five or six copies of your issue of March 8th containing Mr. Green's communication on rural telephones, as I am trying to organize a telephone line in our neighborhood." This man is doing his community a good service—a greater service than will be rendered it by all the politicians who will excite its denizens for ten years to come. We know of no finer opportunity for helping forward one's neighborhood than that afforded by the extension of the rural telephone system among the farmers of the South.

## TALKS ON INSECT PESTS.

### I.—The Peach-tree Borer.

Editors Progressive Farmer:

This insect destroys many peach and plum trees in North Carolina every year, and is one of the very worst pests of the peach tree. It is this insect which causes the gum to appear at the base of infested trees, and any tree thus affected should be attended to without delay, as this is the proper season for worming the trees.

The adult, parent insect is a "moth" or "miller" which very much resembles a wasp in general appearance. The female moth is of a steel-blue color, with a conspicuous orange-yellow band about the body behind the wings, and has the hind pair of wings transparent. The male is of a grayish color marked with lighter yellow but without the distinct band about the body, and has both front and hind wings transparent. The moths appear most numerous during late August and September and after mating, the females deposit the eggs on the bark at the base of the trees. The moths may often be seen flying about the trees during early September. They fly swiftly, keeping close to the ground, so that they can hardly be distinguished from wasps except by very close observation.

The eggs hatch into small, stout-bodied caterpillars which bore in under the bark and eat out the sapwood. Here they remain all winter growing slowly and attain full growth during June, July and August, when they emerge from the tree and spin a cocoon within an inch or two of the tree and just under the surface of the ground. These cocoons may be easily found during the summer.

If the borers completely girdle the tree it will die just as certainly as if girdled with an axe, and even when they are not absolutely fatal the tree becomes so weakened that it is impossible for it to mature a crop of fruit. Within the past week we have seen many hundred of trees in the peach-growing section of Southern Pines in Moore County which had been killed and this pest was the most active agent in causing the destruction.

#### THE REMEDY

The remedy for this pest is to dig out the borers with a knife and kill them. This is a slow and tedious process, but there is no other way so good. But it has the advantage that the longer one keeps up the practice of "worming" his orchard the less likely he is to lose trees by the borer. If your peach or plum trees are affected by this pest, we would advise you to observe closely the following directions:

Worm the trees at once, without delay. To do this to best advantage scrape away the earth with a hoe at the base of each tree to a depth of two to four inches. Now go over the trees carefully with a stout knife cutting away the thickened gum and injured bark to get at the burrows of the borers. Every borer found should be killed. It is well to take along a slender wire so that those which are out of reach of the knife may be probed. Do the work thoroughly. Do not be afraid to cut

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